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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/551,805	09/30/2005	Yasunobu Tsukio	MAT-8751US	6765

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EXAMINER	
DAO, MINH D	

ART UNIT	PAPER NUMBER
2618	

MAIL DATE	DELIVERY MODE
10/31/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/551,805	TSUKIO ET AL.	
	Examiner	Art Unit	
	MINH D. DAO	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 10/10/07 have been considered but are moot in view of the new ground(s) of rejection.

2. Applicant's arguments 10/10/07 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Gross (US 5,977,907).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1,3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kosaki (US 5,889,488) in view of Javor et al. (US 2004/0266356) and further in view of Gross (US 5,977,907).

Regarding claim 1, Kosaki teaches a mobile receiver apparatus (see fig. 14) comprising:

a directivity variable antenna (see fig. 14; col. 2, lines 14-29);

an antenna controller connected with the directivity variable antenna for conducting a control action to align the directivity with a desired direction (see fig. 14, col. 1, lines 53

to col. 2, lines 29); and an optimum directivity calculator connected with the antenna controller for calculating from the current position of a mobile and its surrounding geographical features an optimum pattern of the directivity for improving the response to a desired broadcast signal (see fig. 11; col. 13, lines 10-55. In this case, the Tracking Unit 2 and the Control Unit 6C of Kosaki read on the antenna controller and the Directivity Calculator of the present invention respectively).

However, Kosaki does not mention determining (1) whether to align the plurality of antenna elements in one direction so that antenna directivity is in said direction and (2) whether to align at least one of the plurality of antenna elements in a direction different from at least another one of the plurality of antenna elements so that antenna directivity is omni directional. Javor, in an analogous art, teaches a receiver antenna diversity system equipped with two different antenna (one directional and one omni-directional), the omni-directional antenna may be used in conjunction with the directional antenna to provide radiation pattern diversity antenna selection technique which selects, based on received signal strength of each antenna as it's well known in the art, the best antenna for the receiver system (see figs. 1 and 2; sections [0008-0021]). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the antenna system of Kosaki to implement the receiver antenna diversity technique in order to reduce problems due to destructive interference from multipath fading or interference signals as taught by Javor.

Still regarding claim 1, Kosaki and Javor do not disclose that the optimum directivity calculator includes: a current position detector for detecting the current position of the mobile; and a geographic data storage for storing geographical features which have respective height components in proximity to the current position of the mobile; and the pattern for the directivity of the antenna is further calculated by a combination of the current position of the mobile and the stored geographical features. Gross, in an analogous art, teaches a method and system for antenna pattern synthesis based on geographical distribution of subscribers. The method determines the directions from the satellite to a plurality of terrestrial-based subscribers. Desirably, the directions are expressed in the form of azimuth and elevation angles as referenced from the satellite, although other coordinate systems can be used (see fig. 5, col. 4, lines 39-57). Therefore, it would have been obvious to one of ordinary skilled in the art at the time of the invention was made to provide the above teaching of Gross to the Kosaki and Javor in order for the combined system to allows more efficient use of power resources thus to provide better communications services to terrestrial-based subscribers as taught by Gross.

Regarding claim 3, the combination of Kosaki, Javor and Gross teaches a mobile receiver apparatus according to claim 1, wherein the optimum directivity calculator comprises at least: a directivity calculator; a current position detector for detecting the current position of the mobile; a broadcasting tower position retriever; wherein the directivity calculator calculates an optimum pattern of the directivity for improving the

response to a desired broadcast signal from the positional relationship between the mobile and the broadcasting tower further determined by the broadcast tower; and wherein the antenna controller conducts the control action over the directivity variable antenna corresponding to the output of the directivity calculator (see Kosaki, fig. 1 and 14; col. 13, lines 10-55; col. 1, line 14 to col. 2, line 36; also see figs. 1 and 2; also see Gross , fig. 5, col. 4, lines 39-57)). In addition, Kosaki obviously teaches a storage that stores GPS data received from the antenna 7.

Regarding claim 4, the combination of Kosaki, Javor and Gross teaches a mobile receiver apparatus according to claim 1, wherein the optimum directivity calculator comprises at least: a directivity control data retriever; a current detector for detecting the current position of the mobile; and a directivity control data storage for storing a directivity control data determined from the current position or the geographic data about the current position; wherein the directivity control data retriever examines the current position of the mobile received from the current position detector to retrieve a corresponding directivity control data from the directivity control data storage; and wherein the antenna controller conducts the control action over the directivity variable antenna (see Kosaki, fig. 1 and 14; col. 13, lines 10-55; col. 1, line 14 to col. 2, line 36; also see figs. 1 and 2). In addition, Kosaki obviously teaches a storage that stores the direction information to where the tracking unit should point the antenna in order for the system to communicate the best.

Regarding claim 5, the combination of Kosaki, Javor and Gross teaches a mobile receiver apparatus according to claim 4, wherein the directivity control data storage is connected with a broadcast signal receiver or communicator for receiving directivity control data via the broadcast signal receiver or communicator to update or modify the directivity control data assigned to the current position or the geographical features (see Kosaki, fig. 1 and 14; col. 13, lines 10-55; col. 1, line 14 to col. 2, line 36; also see figs. 1 and 2). In addition, Kosaki obviously teaches a storage that stores the direction information to where the tracking unit should point the antenna in order for the system to communicate the best.

Regarding claim 6, the combination of Kosaki, Javor and Gross teaches a mobile receiver apparatus according to claim 1, wherein the directivity variable antenna is connected at the output to the optimum directivity calculator; and wherein the optimum directivity calculator is arranged to calculate an optimum pattern of the directivity using an output of the directivity variable antenna (see Kosaki, fig. 1 and 14; col. 13, lines 10-55; col. 1, line 14 to col. 2, line 36; also see figs. 1 and 2).

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kosaki (US 5,889,488) in view of Javor et al. (US 2004/0266356), Gross (US 5,977,907) and further in view of Toda et al. (US2004/0140929).

Regarding claim 2, the combination of Kosaki, Javor and Gross, as mentioned above, teaches the limitations of claim 1 but does not mention that the antenna controller is arranged to conduct its control action over the directivity variable antenna in guard intervals which are assigned by an applicable digital broadcast system. Such limitation is taught by Toda in an analogous art for adjusting the antenna directivity (see fig. 3 of Toda; section [0031]). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the above teaching of Toda to Kosaki in order for the combined system to suppress the delayed waves over the guard intervals as taught by Toda (see section [0031]).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MINH D. DAO whose telephone number is 571-272-7851. The examiner can normally be reached on 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MATTHEW ANDERSON can be reached on 571-272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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AU 2618